



Atty. Dkt. HML201A1

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: LOWENSTEIN, M  
Serial No: 08/422,360  
Filed: 04/17/95  
Group Art Unit: 2836  
Examiner: HUYNH, K  
Title: ELECTRICAL FILTER/PROTECTOR, AND METHODS OF  
CONSTRUCTING AND UTILIZING SAME

**RESPONSE TO EXAMINER'S AMENDMENT**

MAIL STOP ISSUE FEE  
COMMISSIONER FOR PATENTS  
P.O. BOX 1450  
ALEXANDRIA, VA 22313-1450

Sir,

Applicant encloses Transmittal of Fees (Part B) and Form PTO-2038 for Issue Fee.

In response to the Examiner's Amendment dated February 21, 2005, Applicant also encloses the following documents pertaining to the above-referenced application:

Application filed 11 April 1995;

Preliminary Amendment-A filed 11 April 1995;

Amendment-B filed 20 September 1995;

Amendment-C filed March 28, 1996;

Preliminary Amendment-A filed October 12, 2000

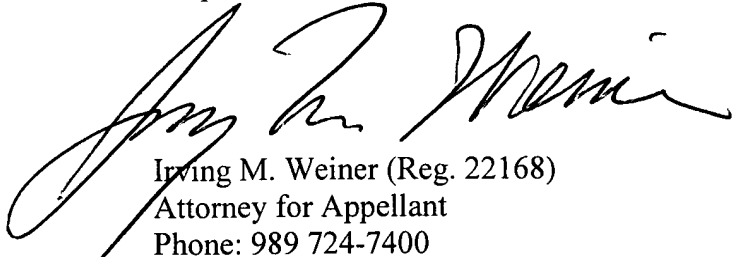
Amendment-B filed March 19, 2001

Amendment-C filed August 21, 2001.



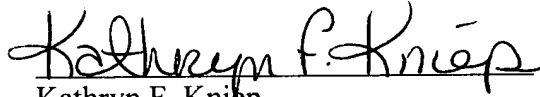
Date: May 20, 2005  
Weiner & Burt, P.C.  
635 N. US-23, P.O. Box 186  
Harrisville, MI 48740

Respectfully submitted,

  
Irving M. Weiner (Reg. 22168)  
Attorney for Appellant  
Phone: 989 724-7400  
Fax 989 724-7100

Certificate of Mailing

I hereby certify that this Response to Examiner's Amendment and the documents mentioned as enclosed therewith were deposited with the U.S. Postal Service on May 20, 2005 as first class mail, addressed to: Mail Stop Issue Fee, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

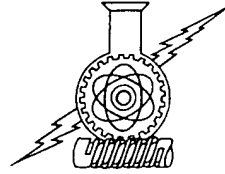
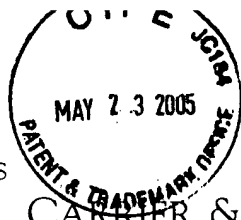
  
Kathryn F. Kniep

LAW OFFICES

WEINER, CARRIER & BURT, P.C.

MAXIM BUILDING  
42400 GRAND RIVER AVENUE  
SUITE 207  
NOVI, MICHIGAN 48375-2573

TELEPHONE (810) 344-4422  
FACSIMILE (810) 344-1096



IRVING M. WEINER  
JOSEPH P. CARRIER  
PAMELA S. BURT

WILLIAM F. ESSER (PATENT AGENT)

SPECIALIZING IN:  
PATENT, TRADEMARK, COPYRIGHT  
& TRADE SECRET MATTERS  
& RELATED LICENSING & LITIGATION

Our Ref. HML-201-A-1  
11 April 1995

Box Patent Application  
Commissioner Of Patents And Trademarks  
Washington, D.C. 20231

Sir:

Enclosed please find an application for U.S. Letters Patent as identified below:

Inventors: Michael Z. LOWENSTEIN  
Invention: ELECTRICAL FILTER/PROTECTOR,  
AND METHODS OF CONSTRUCTING  
AND UTILIZING SAME

and including: Specification, Claims and Abstract; Preliminary Amendment-A; Verified Statement Claiming Small Entity Status; Declaration and Power Of Attorney; and Drawings - 9 sheets informal.

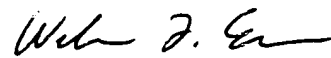
Basic Fee	\$365.00
0 claims over 20 x \$11.00	0.00
0 independent claims over 3 x \$38.00	0.00
<b>TOTAL FILING FEE:</b>	<b>\$365.00</b>

Check No. 18215 for \$365.00 is enclosed herewith in payment of the filing fee. The Commissioner is hereby authorized to charge any deficiency which may be required during the entire pendency of the application, or to credit any excess paid during the entire pendency of the application, to Deposit Account 23-0801 in the name of Weiner, Carrier & Burt, P.C.

A duplicate copy of this sheet is enclosed.

Respectfully submitted,

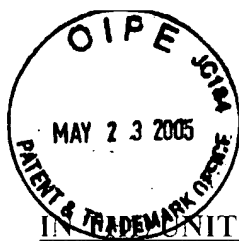
Weiner, Carrier & Burt, P.C.  
Maxim Building  
42400 Grand River Avenue, Suite 207  
Novi, Michigan 48375  
11 April 1995

  
William F. Esser  
Agent for Applicant  
Registration No. 38,053  
(810) 344-4422

I hereby certify that this correspondence is being deposited with the U.S. Postal Service as first class mail in an envelope addressed to Box Patent Application, Commissioner Of Patents And Trademarks, Washington, D.C. 20231 on 11 April 1995.

Dated: 11 April 1995  
WFE/eb  
Enclosures

  
Erica Briggs



UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: LOWENSTEIN, M Attorney Docket No.: HML-201-A-1  
Serial Number: Unknown CPA of 08/422,360 filed 4/17/95  
Filed: Unknown  
Examiner: MEDLEY, S (presumed) Art Unit: 2104 (presumed)  
Title: ELECTRICAL FILTER/PROTECTOR, AND METHODS OF  
CONSTRUCTING AND UTILIZING SAME

**PRELIMINARY AMENDMENT - A**

Assistant Commissioner for Patents  
Box CPA  
Washington D.C. 20231

Sir:

In connection with the above-identified CPA (continued prosecution application), applicant submits the following Preliminary Amendment - A.

**IN THE CLAIMS:**

Please cancel all of the previous claims without prejudice and without abandonment of the subject matter thereof, and substitute therefor the following new claims:

1        22.        In a multiple phase electrical system for supplying power from an AC source to one or  
2        more nonlinear loads connected to at least one phase line therein, a device for substantially  
3        eliminating currents in a neutral wire, said device comprising:

4                a first completely-passive parallel resonant circuit having three passive electrical branches  
5        connected in parallel; and

6                said first completely-passive parallel resonant circuit is tuned to a predetermined harmonic  
7        frequency of a fundamental frequency of said AC source.

1        23.        A device according to claim 22, wherein:

2                said first completely-passive parallel resonant circuit is tuned to a third harmonic frequency  
3        of said fundamental frequency of said AC source.

1        24.        A device according to claim 22, wherein:

2                said three passive electrical branches comprise a first branch consisting of a capacitor, a  
3        second branch consisting of a reactor, and a third branch consisting of a resistor.

1        25.        A device according to claim 23, wherein:

2                said three passive electrical branches comprise a first branch consisting of a capacitor, a  
3        second branch consisting of a reactor, and a third branch consisting of a resistor.

1        26.        A device according to claim 22, wherein:

2                each phase line of said multiple phase electrical system supplies power to an associated one  
3        of said nonlinear loads;

4                said device includes a second completely-passive parallel resonant circuit and a third  
5        completely-passive parallel resonant circuit;

6                each of said first, second and third completely-passive parallel resonant circuits is connected  
7        along a separate phase line of said multiple phase electrical system in series with at least one of said  
8        nonlinear loads which has its power supplied by said separate phase line; and

9                each of said first, second and third completely-passive parallel resonant circuits is tuned to  
10       said predetermined harmonic frequency of said fundamental frequency of said AC source.

1        27.        A device according to claim 23, wherein:

2                each phase line of said multiple phase electrical system supplies power to an associated one  
3        of said nonlinear loads;

4                said device includes a second completely-passive parallel resonant circuit and a third  
5        completely-passive parallel resonant circuit;

6                each of said first, second and third completely-passive parallel resonant circuits is connected  
7        along a separate phase line of said multiple phase electrical system in series with at least one of said  
8        nonlinear loads which has its power supplied by said separate phase line; and

9                each of said first, second and third completely-passive parallel resonant circuits is tuned to  
10       said third harmonic frequency of said fundamental frequency of said AC source.

1        28.        A device according to claim 25, wherein:

2                each phase line of said multiple phase electrical system supplies power to an associated one  
3        of said nonlinear loads;

4                said device includes a second completely-passive parallel resonant circuit and a third  
5        completely-passive parallel resonant circuit;

6                each of said first, second and third completely-passive parallel resonant circuits is connected  
7        along a separate phase line of said multiple phase electrical system in series with at least one of said  
8        nonlinear loads which has its power supplied by said separate phase line; and

9                each of said first, second and third completely-passive parallel resonant circuits is tuned to  
10       said third harmonic frequency of said fundamental frequency of said AC source.

1       29.        A device for substantially eliminating a predetermined harmonic current generated by a  
2       nonlinear load in an electrical distribution system which distributes power from an AC source, said  
3       device comprising:

4                a completely-passive parallel resonant circuit connected in series with said nonlinear load;

5                said completely-passive parallel resonant circuit comprises three completely-passive  
6       electrical branches; and

7                said completely-passive parallel resonant circuit is tuned to [the frequency of said  
8       predetermined harmonic current] to change the current drawn by said nonlinear load.

1        30.        A device according to claim 29, wherein:  
2                said completely-passive parallel resonant circuit is tuned to a third harmonic frequency of  
3        a fundamental frequency of said AC source.

1        31.        A device according to claim 29, wherein:  
2        ~~X~~        said three completely-passive electrical branches comprise a first branch consisting of a  
3        capacitor, a second branch consisting of a reactor, and a third branch consisting of a resistor.

1        32.        A device according to claim 30, wherein:  
2                said three completely-passive electrical branches comprise a first branch consisting of a  
3        capacitor, a second branch consisting of a reactor, and a third branch consisting of a resistor.



1        33.        A device for reducing currents in an electrical system which supplies power to a nonlinear  
2        load from an AC source, comprising:

3                a first passive electrical component connected in series with the nonlinear load;

4                a second passive electrical component connected in parallel to said first passive electrical  
5        component;

6                a third passive electrical component connected in parallel to said first and said second passive  
7        electrical components;

8                said first, second and third passive electrical components are tuned to a third harmonic  
9        frequency of the AC source so as to substantially alter current drawn by the nonlinear load;

10               a housing member for said first, second and third passive electrical components;

11               means for connecting the nonlinear load to said parallel connection of said first, second and  
12        third passive electrical components;

13               said connecting means includes an equipment rack panel member connected to said housing  
14        so as to mount said housing in an equipment rack storing the nonlinear load; and

15               said equipment rack panel member is substantially perforated so as to allow airflow to pass  
16        therethrough.

1        34.        A device according to claim 33, wherein:

2               the nonlinear load comprises a computer having a monitor connected thereto.

1        35.        A device according to claim 34, wherein:

2                said housing member includes electrical connectors for connection to said monitor and said  
3        computer.

1        36.        A device for reducing currents in an electrical system which supplies power to a nonlinear  
2        load from an AC source, comprising:

3                a first passive electrical component connected in series with the nonlinear load;

4                a second passive electrical component connected in parallel to said first passive electrical  
5        component;

6                a third passive electrical component connected in parallel to said first and said second passive  
7        electrical components;

8                said first, second and third passive electrical components are tuned to a third harmonic  
9        frequency of the AC source so as to substantially alter current drawn by the nonlinear load;

10               a housing member for said first, second and third passive electrical components;

11               means for connecting the nonlinear load to said parallel connection of said first, second and  
12        third passive electrical components;

13               an isolation transformer connected between said AC source and said parallel connection of  
14        said first, second and third passive electrical components;

15               said connecting means includes electrical sockets extending therethrough for providing  
16        connection to the nonlinear load; and

17               at least one bracket member for attaching said housing member to a utility cart.

1 37. A device for reducing currents in an electrical system which supplies power to a nonlinear  
2 load from an AC source, comprising:

3 a first passive electrical component connected in series with the nonlinear load;

4 a second passive electrical component connected in parallel to said first passive electrical  
5 component;

6 a third passive electrical component connected in parallel to said first and said second passive  
7 electrical components;

8 said first, second and third passive electrical components are tuned to a third harmonic  
9 frequency of the AC source so as to substantially alter current drawn by the nonlinear load;

10 a housing member for said first, second and third passive electrical components:

11 first means for connecting the nonlinear load to said parallel connection of said first, second  
12 and third passive electrical components;

13 second means, connected in series with said parallel connection of said first, second and third  
14 passive electrical components, for controlling current levels drawn by the nonlinear load; and

15 said second means comprising a current limiting circuit, a circuit for detecting a rapid rise  
16 in current drawn by the nonlinear load, and a switch for automatically deactivating said current  
17 limiting circuit based upon signal levels detected by said current detecting circuit.

1 38. A device according to claim 37, wherein:

2 said current limiting circuit maintains a maximum current level drawn by the nonlinear load  
3 to between approximately 6 and 8 amps.

1 39. A device for reducing currents in an electrical system which supplies power to a nonlinear  
2 load from an AC source, comprising:

3 a completely-passive parallel resonant circuit connected in series with said nonlinear load;

4 said completely-passive parallel resonant circuit comprises three completely-passive  
5 electrical branches;

6 said completely-passive parallel resonant circuit is tuned to the frequency of said  
7 predetermined harmonic current to change the current drawn by said nonlinear load;

8 a housing member for said completely-passive parallel resonant circuit; and

9 means for connecting the nonlinear load to said completely-passive parallel resonant circuit.

1 40. A device according to claim 39, wherein:

2 X the nonlinear load comprises a computer having a monitor connected thereto.

1 41. A device according to claim 40, wherein:

2 X said housing member includes electrical connectors for connection to said monitor and said  
3 computer.

29, 30, 31, 32-39.

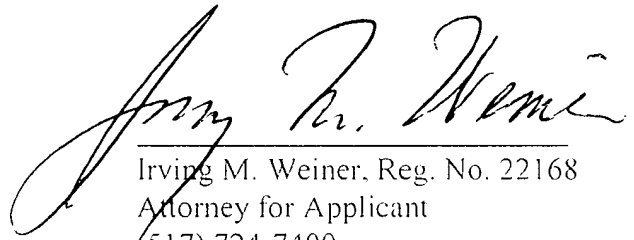
**REMARKS**

Upon entry of the present amendment, the claims in the application are new claims 22-41.

The new claims more clearly define the invention.

Favorable consideration is respectfully requested.

Respectfully submitted,

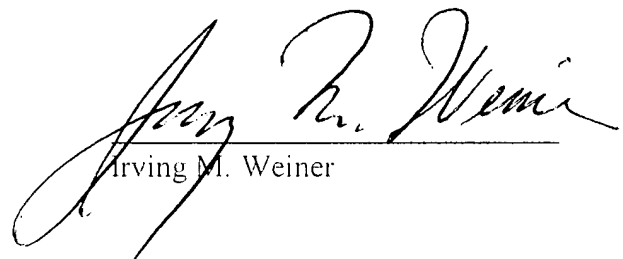
  
Irving M. Weiner, Reg. No. 22168  
Attorney for Applicant  
(517) 724-7400

WEINER & BURT, PC  
635 N. US-23, PO BOX 186  
HARRISVILLE, MI 48740

**CERTIFICATE OF MAILING**

I hereby certify that this correspondence is being deposited with the U.S. Postal Service by first class mail in an envelope addressed to Assistant Commissioner for Patents, Box CPA, Washington, D.C. 20231 on ~~September~~ <sup>October</sup> 12, 2000.

Dated: ~~September~~ <sup>October</sup> 12, 2000

  
Irving M. Weiner



HML-201-A

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	M. Lowenstein
Serial Number:	Unknown
Filing Date:	April 11, 1995
Group Art Unit:	Unknown
Examiner:	Unknown
Title:	ELECTRICAL FILTER/ PROTECTOR, AND METHODS OF CONSTRUCTING AND UTILIZING SAME

PRELIMINARY AMENDMENT - A

Box Patent Application  
Commissioner of Patents and Trademarks  
Washington, D.C. 20231

Sir:

In connection with the above-identified application filed currently herewith, please amend the application as follows.

IN THE TITLE:

Please change "Third Harmonic Blocking Filter/Neutral Protector" to --Electrical Filter/Protector--.


REMARKS

The present Preliminary Amendment is being voluntarily submitted prior to examination in order to correct minor inconsistencies in the title.

Favorable consideration is respectfully requested.

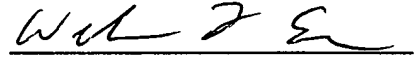
Respectfully submitted,

Weiner, Carrier & Burt, P.C.  
42400 Grand River Ave., Ste. 207  
Novi, Michigan 48375  
April 11, 1995

  
\_\_\_\_\_  
William F. Esser  
Agent for Applicant  
Registration No. 38,053  
(313) 344-4422

I hereby certify that this correspondence is being deposited with the U.S. Postal Service as <sup>first class</sup> ~~express~~ mail in an envelope addressed to Commissioner of Patents and Trademarks, Washington, D.C. 20231 on April 11, 1995.

Dated: April 11, 1995  
IMW/WFE

  
\_\_\_\_\_



HML-201-A-1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	M. Lowenstein
Serial Number:	422,360
Filing Date:	April 17, 1995
Group Art Unit:	2104
Examiner:	S. Medley
Title:	ELECTRICAL FILTER/PROTECTOR, AND METHODS OF CONSTRUCTING UTILIZING SAME

AMENDMENT - B

Box Non-Fee Amendment  
Commissioner of Patents and Trademarks  
Washington, D.C. 20231

Sir:

In response to the outstanding Office Action dated June 20, 1995, please amend the above-identified application as follows.

IN THE SPECIFICATION:

Page 11, line 6, change "switches" to --switched--.

IN THE CLAIMS:



Please amend claim 1 as follows.

1. (amended) In a [Wye-connected] multiple phase electrical system for supplying power from an AC source to [at least one] a plurality of nonlinear [load] loads connected to [a] at least one phase line therein, a device for substantially eliminating currents in the neutral wire [generated by the nonlinear load], said device comprising:

[an] a first electrical circuit comprising

a first passive electrical component connected along a phase line in said electrical system in series [between the AC source and the] with at least one of said nonlinear [load] loads,

a second passive electrical component connected in parallel to said first passive electrical component,

a third passive electrical component connected in parallel to said first and said second passive electrical components; and

wherein said first, said second, and said third passive electrical components of said first circuit are tuned to a harmonic frequency of a fundamental frequency of the AC source so as to substantially eliminate a harmonic current drawn by [the] said at least one nonlinear load connected in series with said parallel connection of said first, said second, and said third passive electrical components.

Please amend claim 2 as follows.

2. (amended) A device as recited in claim 1, wherein:

said first, said second, and said third passive electrical components of said first electrical circuit are tuned to a third harmonic frequency of the AC source.

1 Please amend claim 3 as follows.

2 3. (amended) A device as recited in claim 1, wherein:

3 said first passive electrical component of said first electrical circuit comprises a  
4 capacitor;

5 said second passive electrical component of said first electrical circuit comprises a  
6 reactor; and

7 said third passive electrical component of said first electrical circuit comprises a  
8 resistor.

9 Please amend claim 4 as follows.

10 4. (amended) A device as recited in claim 2, wherein:

11 said first passive electrical component of said first electrical circuit comprises a  
12 capacitor;

13 said second passive electrical component of said first electrical circuit comprises a  
14 reactor; and

15 said third passive electrical component of said first electrical circuit comprises a  
16 resistor.

Please amend claim 5 as follows.

1        5. (amended) A [harmonic] neutral current eliminating device as recited in claim 1,  
2        wherein:

3            each phase line in the electrical system [is connected] supplies power to at least one  
4        nonlinear load;

5            said device [comprises a plurality of said] includes a second and third electrical  
6        [circuits] circuit, each of said first, said second and said third electrical circuits being  
7        connected along a separate phase line [therein] in said electrical system [and] in series with  
8        at least one nonlinear load whose power is supplied by said separate phase line, [so as to]  
9        said first, said second and said third electrical circuits substantially eliminate a harmonic  
10       current in each of said separate phase lines drawn [thereby] by said nonlinear loads;

11           said second electrical circuit comprises a fourth passive electrical component, a fifth  
12        passive electrical component connected in parallel to said fourth passive electrical  
13        component, and a sixth passive electrical component connected in parallel to said fourth and  
14        said fifth passive electrical components;

15           said third electrical circuit comprises a seventh passive electrical component, an  
16        eighth passive electrical component connected in parallel to said seventh passive electrical  
17        component, and a ninth passive electrical component connected in parallel to said eighth and  
18        said seventh passive electrical components; and

19           wherein each of said first, said second and said third electrical circuits is tuned to an  
20        identical harmonic frequency of the AC source.

Please amend claim 6 as follows.

1           6. (amended) A [harmonic] neutral current eliminating device as recited in claim 2,  
2 wherein:

3           each phase line in the electrical system [is connected] supplies power to at least one  
4 nonlinear load;

5           said device [comprises a plurality of said] includes a second and third electrical  
6 [circuits] circuit, each of said first, said second and said third electrical circuits being  
7 connected along a separate phase line [therein] in said electrical system [and] in series with  
8 at least one nonlinear load whose power is supplied by said separate phase line, [so as to]  
9 said first, said second and said third electrical circuits substantially eliminate a harmonic  
10 current in each of said separate phase lines drawn [thereby] by said nonlinear loads;

11           said second electrical circuit comprises a fourth passive electrical component, a fifth  
12 passive electrical component connected in parallel to said fourth passive electrical  
13 component, and a sixth passive electrical component connected in parallel to said fourth and  
14 said fifth passive electrical components;

15           said third electrical circuit comprises a seventh passive electrical component, an  
16 eighth passive electrical component connected in parallel to said seventh passive electrical  
17 component, and a ninth passive electrical component connected in parallel to said eighth and  
18 said seventh passive electrical components; and

19           wherein each of said first, said second and said third electrical circuits is tuned to a  
20 third harmonic of the AC source.

Please amend claim 11 as follows.

11. (amended) A device for reducing currents [substantially eliminating harmonic currents in an electrical system having] in an electrical system which supplies power to a nonlinear load [and] from an AC source[, and increasing the operational range of the nonlinear load], comprising:

a first passive electrical component connected in series with the nonlinear load;

a second passive electrical component connected in parallel to said first passive electrical component;

a third passive electrical component connected in parallel to said first and said second passive electrical component;

a housing member for said first, said second, and said third passive electrical components;

means for connecting the nonlinear load to said parallel connection of said first, said second and said third passive electrical components; and

wherein said first, said second, and said third passive electrical components are tuned to a third harmonic frequency of the AC source so as to substantially alter current drawn by the nonlinear load.

Please amend claim 12 as follows.

12. (amended) A device as recited in claim 11, [including] wherein:  
[a housing for said first, said second, and said third passive electrical components;  
and]

said connecting means includes an equipment rack panel member connected to said housing<sup>member</sup> so as to mount said housing<sup>member</sup> in an equipment rack storing the nonlinear load; and

wherein said equipment rack panel member is substantially perforated so as to allow airflow to pass therethrough.

Please amend claim 13 as follows.

1 13. (amended) A device as recited in claim 11, [including] wherein:

2 [an electrical housing member;]

3 said connecting means includes at least one electrical socket for connecting to the  
4 nonlinear load, said socket being disposed along a first surface of said housing member[:],  
5 and at least one bracket member for mounting said device along a substantially planar  
6 surface so that said socket and said first surface of said housing member are substantially  
7 aligned with said planar surface, said device substantially replacing a conventional wall outlet.

Please amend claim 15 as follows.

1 15. (amended) A device as recited in claim 11, further including:

2 an isolation transformer connected between said AC source and said parallel  
3 connection of said first, said second, and said third passive electrical components;

4 [a housing member having] wherein said connecting means includes electrical  
5 [connectors] sockets extending therefrom for providing connection to the nonlinear load[:],  
6 and at least one bracket member for attaching said housing member to a utility cart.

Please delete claim 16 without prejudice and without dedication or abandonment of  
the subject matter thereof.

Please amend claim 17 as follows.

1 17. (amended) A device as recited in claim 11, including:

2 means, connected in series with said parallel [combination] connection of said first,  
3 said second, and said third passive electrical components, for [clamping] controlling current  
4 levels drawn by the nonlinear load, comprising a current [clamping] limiting circuit, a  
5 [sensor] circuit for detecting a rapid rise in current drawn by the nonlinear load and [means]  
6 a switch for automatically deactivating said clamping circuit based upon signal levels detected  
7 by said [sensor] current detecting circuit.

Please amend claim 18 as follows.

1        18. (amended) A device as recited in claim 17, wherein:  
2        said first, said second, and said third [devices] electrical components are tuned to a  
3        third harmonic frequency of the AC source.

Please amend claim 19 as follows.

1        19. (amended) A device as recited in claim 18, wherein:  
2        said current level [clamping] limiting circuit maintains a maximum current level drawn  
3        by the nonlinear load to between approximately 6 and 8 amps[; and  
4        the nonlinear load includes a heating unit].

Please add the following new claims 20-21.

-20-

A device as recited in claim 1, wherein:

1        each phase line in the electrical system supplies power to at least one nonlinear load;  
2        said device includes a second electrical circuit, each of said first and said second  
3        electrical circuits being connected along a separate phase line therein in said electrical  
4        system and in series with at least one nonlinear load whose power is supplied by said  
5        separate phase line, said first and said second electrical circuits substantially eliminate a  
6        harmonic current in each of said separate phase lines drawn by said nonlinear loads;  
7        said second electrical circuit comprises a fourth passive electrical component, a fifth  
8        passive electrical component connected in parallel to said fourth passive electrical  
9        component, and a sixth passive electrical component connected in parallel to said fourth and  
10       said fifth passive electrical components;  
11       wherein each of said first and said second electrical circuits is tuned to an identical  
12       harmonic frequency of the AC source.

1 A device as recited in claim 1, wherein:  
2 each phase line in the electrical system supplies power to at least one nonlinear load;  
3 said device includes a second electrical circuit, each of said first and said second  
4 electrical circuits being connected along a separate phase line therein in said electrical  
5 system and in series with at least one nonlinear load whose power is supplied by said  
6 separate phase line, said first and said second electrical circuits substantially eliminate a  
7 harmonic current in each of said separate phase lines drawn by said nonlinear loads;  
8 said second electrical circuit comprises a fourth passive electrical component, a fifth  
9 passive electrical component connected in parallel to said fourth passive electrical  
10 component, and a sixth passive electrical component connected in parallel to said fourth and  
11 said fifth passive electrical components;  
12 wherein each of said first and said second electrical circuits is tuned to a third  
13 harmonic frequency of the AC source.

#### REMARKS

Initially, applicant sincerely appreciates the telephonic interview applicant's representative had with the Examiner. The interview included discussions pertaining to the objections and rejections raised in the outstanding Office Action. As a result of the interview, applicant amends the claims to more closely follow the Examiner's requirements.

Upon entry of the present amendment, the claims in the application are claims 1-15 and 17-21, which is the same number of claims previously paid for (three independent claims and a total of 20 claims). Accordingly, no additional claim fee is believed to be due.

The specification is objected to under 35 USC §112, first paragraph, for failing to provide an enabling disclosure, and claims 17-19 stand rejected under 35 USC §112, first paragraph, similarly. Specifically, the Examiner alleges that a current limiting or clamping circuit, a sensor and a circuit for deactivating the current clamping circuit are not clearly disclosed in the specification. In response thereto, applicant respectfully submits that persons of ordinary skill in the art of electrical system design would be able to make the



invention claimed in claims 17-19 and in particular a current limiting circuit, current level detecting circuit and a switch for deactivating circuits without undue experimentation based upon present circuit design techniques. Applicant respectfully submits that applicant is not claiming a current clamping circuit, a current level detecting circuit or a circuit deactivating circuit in isolation, but rather is claiming the use of such circuits in a unique and nonobvious way as specified in claims 17-19. Significantly, the Examiner has even admitted to such circuits being in existence by taking official notice to that effect. Applicant submits herewith U.S. Patent 4,541,029 as proof of applicant's position. As a result, the objection to the specification and the rejection to claims 17-19 are believed to be overcome.

Claims 5, 6, and 12-19 stand rejected under 35 USC §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the present invention. In response thereto, applicant submits the following.

Claims 1, 5 and 6 have been amended to more clearly point out the subject matter of applicant's invention. Specifically, claim 1 defines a device for substantially eliminating neutral currents generated by nonlinear loads connected to at least one phase line in a multiple phase electrical power system, comprising a parallel combination of three passive electrical components (the first electrical circuit) connected along a phase line therein, in series with at least one of the nonlinear loads and tuned to a harmonic of the AC source so as to substantially eliminate a harmonic current drawn by the at least one nonlinear loads connected to the first electrical circuit.

Further, claims 5 and 6 further define the invention by claiming second and third electrical circuits (each comprising the parallel combination of passive electrical components), with each of the first, second and third electrical circuits being connected along a separate phase line in series with at least one nonlinear load whose power is supplied by that separate phase line, the electrical circuits substantially eliminating a harmonic current drawn by the nonlinear loads in each of the phase lines.

Applicant respectfully submits that amended claims 5 and 6 do in fact further limit the invention from which each depends because claims 1 and 2 now define the first electrical circuit (parallel combination of three passive components) being connected to a phase line;

and whereas claims 5 and 6 now include second and third electrical circuits, each of which is connected along a separate phase line for reducing harmonic currents in the phase lines, thereby reducing neutral currents. Applicant respectfully submits that the language in claims 5 and 6 of each of the electrical circuits (the parallel combination of three passive electrical components) being tuned to an identical harmonic frequency (claim 5) and to a third harmonic frequency (claim 6) are different from only the first electrical circuit being tuned to a harmonic (claim 1) or to a third harmonic (claim 2), thus further limiting claims 1 and 2, respectively. As a result, applicant respectfully submits that the rejection to claims 5 and 6 under 35 USC §112, second paragraph, is now believed to be overcome.

Concerning claims 12-15 and 19, applicant respectfully submits that the claim limitations therein do in fact strongly relate to the device claimed in amended claim 11. Claim 11 stands amended to include a means for connecting the device to a nonlinear load. Further, amended claims 12-15 and 19 clearly define the nature of the claimed invention in sufficient detail so an ordinary person in the art of electrical system or electric circuit design is capable of making the device without undue experimentation.

For instance, claim 12 now pertains to and further defines the connecting means of amended claim 11 as including an equipment rack panel member for mounting the device in an equipment rack so as to allow a nonlinear load stored in the equipment rack to electrically connect thereto.

Similarly, amended claim 13 further defines the connecting means from claim 11 as having at least one electrical socket for electrically connecting to the nonlinear load, and a bracket member for mounting the device (including the electrical socket) along a wall surface.

Claim 14 further defines the invention by including a monitor saver board. Applicant respectfully submits that the monitor saver board is quite clearly related to a device for "reducing currents in an electrical system which supplies power to a nonlinear load" (claim 11, lines 1-3), through decreasing current drawn by the computer monitor loads during periods of inactivity.

Applicant respectfully submits that no language in claims 12-16 and 19 is in any way vague or indefinite, nor are the claims overly broad relative to the relevant art and to the

subject matter disclosed in the application. As a result, applicant respectfully submits that the rejection of claims 5, 6 and 12-19 under 35 USC §112, second paragraph, has been overcome.

Claim 15 stands rejected under 35 USC §112, second paragraph, as lacking structural cooperation between features claimed in claim 11. In response thereto, applicant amends claim 15 to provide such structural cooperation.

Claim 17 stands rejected under 35 USC §112, second paragraph as being indefinite. In response thereto, applicant amends claim 17 to define a current control means (comprised of a current clamping circuit, a current detecting circuit and an electric switch) being connected in series with the parallel connection of the first, second and third passive electrical components. The resulting circuit (a series combination of a current control means with the parallel combination of the first, second, and third passive components) can in fact be connected in series with a nonlinear load, as shown in FIG. 13 of the application. Applicant respectfully submits that this resulting combination of circuits properly defines a device for "reducing currents in an electrical system" (claim 11, lines 1-3) in that the current control means substantially reduces the effects of large current spikes so as to increase the fanout of the electrical system. As a result, applicant submits that the 35 USC §112, second paragraph, rejection to claim 17 has now been overcome.

Claim 18 has been amended to overcome a rejection under 35 USC §112, second paragraph, for lacking an antecedent basis.

Claims 12-16 and 19 stand rejected under 35 USC §112, fourth paragraph, as allegedly being of improper dependent form for failing to further limit the subject matter of the previous claim. In response thereto, applicant traverses the rejection for the reasons stated hereinabove and the following.

First, claims 12, 13 and 15 pertain to the interface of the device and in particular to the way in which the device is connected into the electrical system and as such are directly related to the device recited in claim 11. In fact, the features defined in the claims, the equipment rack panel member (claim 12), the wall outlet mounting bracket (claim 13) and the utility cart mounting bracket (claim 15), further define substantially complete embodiments of the present invention by further defining the connecting means member

positively recited in claim 11. Quite clearly, contentions by the Examiner that claims 12, 13, and 15 refer to multiple inventions from claim 11 are now believed to be overcome.

Claim 14 depends from claim 11 and further defines the device as including a computer monitor saver board. Applicant respectfully submits that the inclusion of a monitor saver board feature directly relates to a device for "reducing currents in an electrical system" (amended claim 11, lines 2-3) in that the monitor saver board reduces current in the electrical system by reducing the current drawn by the computer monitors therein during periods of inactivity. As a result, the device allows the operation of the electrical system to expand to power more loads (computers) by reducing harmonic currents as well as average current levels. By further defining the connecting means positively recited in claim 11, claim 14 is now in proper dependent form.

Claim 19, which depends from claim 18 which itself depends from claim 17, defines specific features of the current control means of a preferred embodiment of the present invention. Applicant respectfully submits that claims 17-19 are directly related to a device for reducing currents in an electrical system in that the inclusion of the current control means limits the peak current drawn by loads in the electrical system. Further, it is unclear to the applicant how claim 19 alone can be subject to a rejection under 35 USC §112, fourth paragraph when claim 19 only further defines the current limiting characteristics and elements of the invention claimed in claim 18, which itself is not subject to a rejection under 35 USC §112, fourth paragraph.

As a result, applicant respectfully submits that the features claimed in amended claims 12-15 and 19 have everything to do with and directly relate to the device recited in amended claim 11, thereby further limiting the subject matter thereof. Accordingly, the rejection of claims 12-15 and 19 under 35 USC §112, fourth paragraph, is now believed to be overcome.

Claims 1-11 stand rejected under 35 USC §103 as being unpatentable over an alleged acknowledged prior art in view of Stacey and Thanawala. In response thereto, applicant respectfully traverses such rejection and submits the following.

Initially, applicant respectfully submits that no reference cited by the Examiner discloses, teaches or even remotely suggests a device for substantially eliminating neutral

currents in a multiple phase electrical power system, as recited in claims 1-6. As stated in *In re Nomiya*, 184 USPQ 607, 612 (CCPA 1975),

[Where] there is no evidence of record that a person of ordinary skill in the art at the time of [an applicant's] invention would have expected [a problem], . . . it is not proper to conclude that [an invention], which solves this problem . . . would have been obvious to that hypothetical person of ordinary skill in the art.

Here, no reference cited by the Examiner discloses the application of a device which is tuned to a harmonic frequency of an AC power supply in substantially addressing the problem of increased neutral currents. Applicant respectfully submits that the particular application of such a device to achieve substantially reduced neutral currents is markedly distinct from the application of the devices disclosed in Stacey and Thanawala. In the absence of any disclosure of a problem pertaining to neutral currents or of a device for reducing neutral currents in an electrical power system, applicant respectfully submits that the specific device claimed in claims 1-6 are distinct and nonobvious over the Examiner's proposed combinations.

Further, no reference disclosed by the Examiner teaches, discloses or otherwise suggests a device for eliminating harmonic currents generated by a nonlinear load in an electrical system, *consisting* of a parallel combination of a first, second, and third passive electrical component, the parallel combination being connected in series with a nonlinear load and tuned to a harmonic frequency of the AC source, as recited in claim 7; wherein the parallel combination is tuned to a third harmonic of the AC source, as recited in claim 8; and wherein the first passive component is a resistor, the second passive component is a reactor, and the third passive component is a capacitor, as recited in claims 9 and 10. In sharp and distinct contrast, the Examiner relies upon the Stacey reference which discloses a *hybrid* device for a *linear* load primarily comprising *active* component(s) 28 (FIGS. 1 and 5); and the Thanawala reference which discloses various combinations of damping circuits which are connected *in series* a compensating capacitor C and a saturable reactor L, the resulting circuit not only failing to disclose a parallel combination of three passive components but also failing to disclose a device which is connected in series with a load (the

resulting circuit is in fact connected in parallel to other devices in the system).

Applicant respectfully reminds the Examiner that the transitional phrase "consisting of" in a preamble of a claim is a closed limitation, as opposed to the transitional phrase "comprising" in a claim preamble. Clearly, in the absence of any reference or combination thereof which discloses a device consisting solely of a parallel combination of three passive electrical components which is connected in series with a nonlinear load so as to reduce harmonic currents generated thereby, applicant respectfully submits that the invention claimed in claims 7-10 is nonobvious.

Significantly, concerning the Examiner's proposed combinations of teachings, applicant respectfully submits that the combination proposed by the Examiner is improper. First, obviousness cannot be established by combining teachings from relevant art to produce the claimed invention if there is no teaching, suggestion, or incentive supporting the combination. *ACS Hospital Systems, Inc. v. Montefiore Hospital et al.*, 221 USPQ 929, 933 (Fed. Cir. 1984). Moreover, references are not properly combinable if their intended function is destroyed. *In re Gordon*, 221 USPQ 1125 (Fed. Cir. 1984). Here, no teaching, suggestion or incentive exists in Stacey or Thanawala for combining the teachings of each or of combining the Stacey teachings with any alleged prior art. Stacey discloses an active device which actually *generates* a ripple current in order to offset ripple current existing in the electrical system under *all* conditions of input frequency and passive component variations (column 3, lines 60-67; and column 4, lines 63-68). Quite obviously, the Stacey device cannot function in this regard if its active element is replaced with a passive component such as a resistor. Thus no teaching, suggestion nor incentive exists in combining the teachings from Thanawala with the Stacey device or from Stacey with an alleged prior art. On the contrary, a *disincentive* actually exists in combining the teachings of each proposed combination, as the primary purpose of Stacey will be altogether destroyed thereby.

Regarding the Examiner's proposed combination of Stacey with the alleged prior art as well as the proposed combination of Stacey and Thanawala teachings, it is impermissible to extract from a reference

only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art.

*In re Wesslau*, 147 USPQ 391 (CCPA 1965). With respect to the combination of Stacey with the alleged prior art, the Examiner has extracted series connected passive components of Stacey to the exclusion of the active components which are entirely necessary to the full appreciation of what Stacey fairly suggests to an ordinary artisan, i.e., a hybrid device for generating offset ripple currents in an electrical system. As a result, applicant respectfully submits that the proposed combination of Stacey with an alleged prior art is improper.

With regard to the proposed combination of Stacey and Thanawala, applicant respectfully submits that the Examiner has somehow extracted a resistor  $R$ , capacitor  $C_P$ , and reactor  $L_D$  from FIGS. 9, 11, 13 and 15 of Thanawala while completely disregarding the fact that the circuits in the drawings are in fact connected *in series* with compensating capacitor  $C$  and with saturable reactor  $L$  of the electrical circuit (column 4, lines 34-41) so that the cumulative circuit is *shunted* across a device; that the series combination of  $C_D$  and  $L_D$  form a *series* resonant circuit (column 4, lines 39-41) as opposed to an alleged parallel combination of  $C_P$  and  $L_D$  as contended by the Examiner; and that other components are utilized in Thanawala so that the cumulative circuit functions as a damping circuit. Indeed, applicant respectfully submits that the Examiner not only has extracted components from the Thanawala devices while ignoring other components which are vital and necessary to the performance and appreciation of the Thanawala invention, but also modified the interrelationship of the extracted components to such an extent that the extracted components function and interrelate entirely contrary to that disclosed by Thanawala. As a result, applicant respectfully submits that the combination of Thanawala and Stacey as proposed by the Examiner is improper.

Applicant respectfully submits that the Examiner's assertion that it would have been obvious to provide a parallel RLC combination in series along each phase line in order to provide balanced protection is a mere bald assertion without any teaching in support thereof. Significantly, no reference cited by the Examiner discloses or otherwise suggests any device

for substantially eliminating neutral currents in a three phase electrical system.

As a result, in an absence of any teaching disclosing or otherwise suggesting a device for reducing neutral currents in an electrical system; when there is no suggestion, teaching or incentive for the proposed combinations; when the proposed combinations completely defeat the purpose of the Stacey reference; when the Examiner has impermissibly extracted portions of the Stacey and Thanawala references to the exclusion of vital portions necessary to fully appreciate what each suggests; and when extracted portions of the Thanawala reference are asserted to perform a function which is contrary to what is taught in Thanawala, applicant respectfully submits that the Examiner has failed to establish prima facie obviousness of the invention claimed in claims 1-11. Accordingly, applicant respectfully requests that the rejection to claims 1-11 under 35 USC §103 be reconsidered and withdrawn.

Claims 12-19 stand rejected under 35 USC §103 as being unpatentable over the alleged acknowledged prior art in view of Stacey and Thanawala as applied to the rejection of claims 11, and further in view of Gilardi. In response thereto, applicant respectfully traverses the rejection based upon the reasons stated hereinabove as applied to the rejection of claims 1-11 under 35 USC §103 and upon the following.

Applicant respectfully submits that the proposed combination fails to disclose or otherwise suggest a device for reducing currents in an electrical system, including a connecting means having an equipment rack panel member with perforations for permitting airflow so that loads stored in the rack may be connected to the device, as recited in amended claim 12. This feature is a significant improvement because the device may be mounted in a conventional equipment rack in place of a cooling panel and connected to nonlinear loads without sacrificing equipment rack space.

In addition, the proposed combination fails to disclose or otherwise suggest a current reducing device including a connecting means having a bracket member for mounting the device along a planar surface so as to replace a conventional wall outlet and to connect to a nonlinear load. Such a device is significant and advantageous in allowing the protection circuitry to be substantially hidden and unobservable from view.

The proposed combination additionally fails to disclose or otherwise suggest a current



reducing device including a connecting means comprising a bracket member for mounting the device to a utility cart, as recited in claim 15. Such a device is significant and advantageous in providing a device which connects to and is used with substantially portable equipment, such as medical equipment transported on a hospital utility cart.

Further, the combination proposed by the Examiner fails to disclose or otherwise suggest a device for reducing currents in an electrical system in which it is connected, including a monitor saver board, as recited in claim 14. The device claimed in claim 14 is distinct and advantageous in that the monitor saver board feature saves energy and thereby allows the electrical system to supply power to an increased number of loads.

Still further, the proposed combination fails to disclose or otherwise suggest a device for reducing currents in an electrical system into which it is connected, including a current controlling means comprising a current limiting circuit, a circuit for detecting a rapid rise in current drawn by the load and a switch for automatically deactivating the current limiting circuit, as recited in amended claim 17; wherein the harmonic current limiter is tuned to a third harmonic, as recited in claim 18; and wherein the current limiting circuit maintains a maximum current level drawn by the loads to between 6 and 8 amps, as recited in claim 19. The devices claimed in claims 17-19 provide a significant improvement by not only substantially eliminating harmonic currents but also reducing peak currents in the electrical system, thereby improving the operation of the electrical system.

With regard to the Examiner taking official notice that current sensing and current limiting is well known to those skilled in the art and that it would have been an obvious modification to the Stacey device to detect and limit a high current, applicant respectfully traverses such assertion and requests that the Examiner provide references in support thereof.

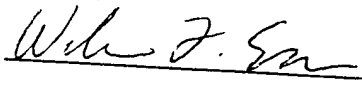
As a result, applicant respectfully submits that the Examiner has failed to establish prima facie obviousness of the invention claimed in claims 12-19. Accordingly, applicant respectfully requests that the rejection of claims 12-19 under 35 USC §103 be reconsidered and withdrawn.

The application is now believed to be in a condition for allowance, and a notice of this effect is earnestly solicited.

Favorable reconsideration is respectfully requested.

Respectfully submitted,

Weiner, Carrier & Burt, P.C.  
42400 Grand River Ave., Ste. 207  
Novi, Michigan 48375  
September 20, 1995

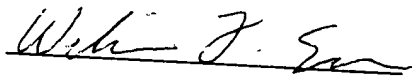
  
William F. Esser  
Agent for Applicant  
Registration No. 38,053  
(810) 344-4422

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the U.S. Postal Service as first class mail in an envelope addressed to Commissioner of Patents and Trademarks, Washington, D.C. 20231 on September 20, 1995.

Dated: September 20, 1995

WFE





HML-201-A

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: M. Lowenstein  
Serial Number: 422,360  
Filing Date: April 17, 1995  
Group Art Unit: 2104  
Examiner: S. Medley  
Title: ELECTRICAL FILTER/PROTECTOR, AND  
METHODS OF CONSTRUCTING AND  
UTILIZING SAME

Box AF  
Commissioner of Patents and Trademarks  
Washington, D.C. 20231

*Amendment - C*

Sir:

In response to the outstanding Office Action dated 28 December 1995, please amend the above-identified application as follows.

**IN THE CLAIMS:**

Please amend claim 1 as follows.

1           1. (twice amended) In a multiple phase electrical system for supplying power from  
2 an AC source to a plurality of nonlinear loads connected to at least one phase line therein,  
3 a device for substantially eliminating currents in the neutral wire, said device comprising:

4           a first electrical circuit comprising

5                 a first passive electrical component connected along a phase line in said  
6 electrical system in series with at least one of said nonlinear loads,

7                 a second passive electrical component connected in parallel to said first  
8 passive electrical component,

9                 a third passive electrical component connected in parallel to said first  
10 and said second passive electrical components, thereby forming a parallel  
11 connection between said first, said second, and said third passive electrical  
12 components; and

13           wherein said first, said second, and said third passive electrical components of said  
14 first circuit are tuned to a harmonic frequency of a fundamental frequency of the AC source  
15 so as to substantially eliminate a harmonic current drawn by said at least one nonlinear load  
16 connected in series with said parallel connection of said first, said second, and said third  
17 passive electrical components.

Please amend claim 11 as follows.

11. (twice amended) A device for reducing currents in an electrical system which supplies power to a nonlinear load from an AC source[, and increasing the operational range of the nonlinear load], comprising:

a first passive electrical component connected in series with the nonlinear load;

a second passive electrical component connected in parallel to said first passive electrical component;

a third passive electrical component connected in parallel to said first and said second passive electrical component, thereby forming a parallel connection between said first, said second, and said third <sup>passive</sup> electrical components;

a housing member for said first, said second, and said third passive electrical components;

means for connecting the nonlinear load to said parallel connection of said first, said second and said third passive electrical components; and

wherein said first, said second, and said third passive electrical components are tuned to a third harmonic frequency of the AC source so as to substantially alter current drawn by the nonlinear load.

Claim 12, line 5, before "so" insert --member--;  
line 5, before "in" insert --member--.

Claim 15, line 3, after "components;" insert --and--.

#### REMARKS

Upon entry of the present amendment, the claims in the application are claims 1-15 and 17-21, which is the same number of claims previously paid for (three independent claims and a total of 20 claims). Accordingly, no additional claim fee is believed to be due.

Applicant amends claims 1 and 11 in order to eliminate the number of issues on appeal by responding to and overcoming the Examiner's rejection to claims 11-15 under 35 USC §112, second paragraph. Although claim 11 had already expressly recited that the first,

second and third passive electrical components were connected in parallel (noting the parallel connection language in claim 11, lines 6-9) so that a proper antecedent basis already exists for the phrase "said parallel connection", applicant amends claims 1 and 11 to even further expressly recite the structural relationship between the first, second and third passive electrical components. As a result, applicant respectfully submits that the Examiner's rejection to claims 11-15 under 35 USC §112, second paragraph, is overcome.

Claims 12-15 stand rejected under 35 USC §112, fourth paragraph, for allegedly failing to further limit the subject matter of the previous claim. In response thereto, applicant respectfully submits the following.

According to 35 USC §112, fourth paragraph, dependent claims may reference a previous claim and specify "a further limitation of the subject matter claimed." In the present case, claim 11 (as amended in Amendment B) properly and expressly recites a "means for connecting the nonlinear load to said parallel connection of said first, said second and said third passive electrical components" (claim 11, lines 12-13). This connecting means certainly is an element of the invention claimed in claim 11 and thus is part of the subject matter thereof. Further, claims 12-15 merely further limit this connecting means by defining the connecting means as comprising an equipment rack panel member (claim 12), an electrical socket (claims 13 and 15), etc. Because claims 12-15 merely further limit the subject matter (the connecting means) expressly recited in claim 11, applicant respectfully submits that claims 12-15 clearly fully comply with 35 USC §112, fourth paragraph, and respectfully requests that the Examiner's rejection thereto be reconsidered and withdrawn.

Favorable reconsideration is respectfully requested.

Respectfully submitted,



Weiner, Carrier & Burt, P.C.  
42400 Grand River Ave., Ste. 207  
Novi, Michigan 48375  
March 28, 1996

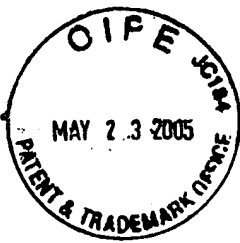
William F. Esser  
Agent for Applicant  
Registration No. 38,053  
(810) 344-4422

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the U.S. Postal Service as first class mail in an envelope addressed to Commissioner of Patents and Trademarks, Box AF, Washington, D.C. 20231 on March 28, 1996.

Dated: March 28, 1996  
WFE

W. J. E.



Atty Ref.HML-201-A-1

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: LOWENSTEIN, M  
Serial No: 08/422,360  
Filed: 04/17/95  
Group Art Unit: 2836  
Examiner: HUYNH, K  
Title: ELECTRICAL FILTER/PROTECTOR, AND METHODS...

**AMENDMENT-B**

Box Non-Fee Amendment  
Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

In response to the Office Action mailed November 24, 2000, please amend the above-identified patent application as follows:



IN THE CLAIMS:

Please amend claim 22 as follows:

22. (amended) In a multiple phase electrical system for supplying power from an AC source to one or more nonlinear loads connected to at least one phase line therein, a device for substantially eliminating currents in a neutral wire, said device comprising:

a first completely-passive parallel resonant circuit having three passive electrical branches connected and parallel; [and]

said first completely-passive parallel resonant circuit is tuned to a [predetermined] third harmonic frequency of a fundamental frequency of said AC source; and

said three passive electrical branches comprises a first branch consisting of a capacitor, a second branch consisting of a reactor, and a third branch consisting of a resistor.

Please cancel claims 23-25 without prejudice, and without abandonment or dedication of the subject matter thereof.

Please amend claim 26 as follows:

26. (amended ) A device according to claim 22, wherein:

each phase line of said multiple phase electrical system supplies power to an associated one of said nonlinear loads;

said device includes a second completely-passive parallel resonant circuit and a third completely-passive power resonant circuit;

each of said first, second and third completely-passive parallel resonant circuits is connected along a separate phase line of said multiple phase electrical system in series with at least one of said nonlinear loads which has its power supplied by said separate phase lines; and

each of said first, second and third completely-passive parallel resonant circuits is tuned to said [predetermined] third harmonic frequency of said fundamental frequency of said AC source.

Please cancel claims 27 and 28 without prejudice, and without abandonment or dedication of the subject matter thereof.

Please amend claim 29 as follows:

29. (amended) A device for substantially eliminating a predetermined harmonic current generated by a nonlinear load in an electrical distribution system which distributes power from an AC source, said device comprising:

a completely-passive power resonant circuit connected in series with said nonlinear load; said completely-passive power resonant circuit comprises three completely-passive electrical branches; [and]

said completely-passive power resonant circuit is tuned to [the frequency of said predetermined harmonic current] a third harmonic frequency of a fundamental frequency of said AC source to change the current drawn by said nonlinear load; and

said three completely-passive electrical branches comprise a first branch consisting of a capacitor, a second branch consisting of a reactor, and a third branch consisting of a resistor.

Please cancel claims 30-32 without prejudice, and without abandonment or dedication of the subject matter thereof.

Please amend claim 39 as follows:

39 (amended) A device for reducing currents in an electrical system which supplies power to a nonlinear load from an AC source, comprising:

a completely-passive parallel resonant circuit connected in series with said nonlinear load;  
said completely-passive parallel resonant circuit comprises three completely-passive electrical branches;

said completely-passive power resonant circuit is tuned to [the] third harmonic frequency of said [predetermined harmonic current] AC source to change the current drawn by said nonlinear load;

a housing member for said completely-passive parallel resonant circuit and means for connecting the nonlinear load to said completely-passive parallel resonant circuit.

Please cancel claims 40 and 41 without prejudice, and without abandonment or dedication of the subject matter thereof.

## REMARKS

Upon entry of the present amendment, the claims remaining in the application are claims 22, 26, 29, and 33-39.

A clean copy of the amended claims 22, 26, 29 and 39 are also enclosed herewith.

Amended claim 22 combines the subject matter of previous claims 22, 23 and 24.

Amended claim 26 depends from the amended claim 22, and specifically recites that each of said first, second and third completely-passive parallel resonant circuits is tuned to said third harmonic frequency of said fundamental frequency of said AC source.

Amended claim 29 combines the subject matters of previous claims 29, 30 and 31.

Amended claim 39 now specifically recites that said completely-passive parallel resonant circuit is tuned to a third harmonic frequency of said AC source to change the current drawn by said nonlinear load.

Applicant respectfully submits that the amended claims 21, 26, 29 and 39 are not unpatentable under 35 USC 103(a) over applicant's admitted prior art (APA) in view of Stacey and Thanawala.

Clearly, the Examiner does not contend that the claims as now amended are unpatentable over the APA in view of Stacey alone.

Similarly, it is also clear that the Examiner does not contend that the claims as now amended are unpatentable over the APA in view of Thanawala alone.

Assuming arguendo but not conceding that the APA makes a suggestion leading the artisan to look to the 1974 Stacey reference, and assuming arguendo but not conceding that the APA makes a suggestion leading the artisan to look to the 1975 Thanawala reference, it is respectfully submitted that the APA makes absolutely no suggestion which would lead artisans to combine the 1974 Stacey reference with the 1975 Thanawala reference.

It is also clear that, even with respect to the appealed claims which are broader than the now-amended claims, "the references of Stacey and Thanawala, standing alone, would not have suggested appellant's invention to the artisan". (Appeal No. 1997-1187, decision rendered 7/25/00, see page 4 of the opinion).

Even if the APA itself suggests the combining of the 1974 Stacey reference with the 1975 Thanawala reference (which the APA does not), "It is improper to combine prior art references solely because the inventor's patent itself suggests the new combination of old elements." Mitsubishi Electric Corporation v Ampex Corporation, (CAFC, 8/30/1999, No. 97-1502).

Nothing in the APA suggests the combination of the 1974 Stacey reference and the 1975 Thanawala reference. Furthermore, the Examiner has not satisfied the burden of obviousness in light of combination by showing some objective teaching leading to the combination.

As the Court of Appeals for the Federal Circuit stated in *In re Dembiczak* (4/28/1999, No. 98-1498):

Our analysis begins in the text of section 103 quoted above, with the phrase "at the time the invention was made." For it is this phrase that guards against entry into the "tempting but forbidden zone of hindsight." see Loctite Corp. v Ultraseal Ltd., 781 F.2d 861, 873, 28 USPQ 90, 98 (Fed. Cir. 1985), overruled on other grounds by Nobelpharma AB v Implant Innovations, Inc., 141 F.3d 1059, 46 USPQ2d 1097 (Fed. Cir. 1998), when analyzing the patentability of claims pursuant to that section. Measuring a claimed invention against the standard established by section 103 requires the oft-difficult but critical step of casting the mind back to the time of invention, to consider the thinking of one of ordinary skill in the art, guided only by

the prior art references and the then-accepted wisdom in the field. See, e.g., W.L. Gore & Assoc., Inc. v Garlock, Inc., 721 F2d 1540, 1553, 220 USPQ 303, 313 (Fed. Cir. 1983). Close adherence to this methodology is especially important in the case of less technologically complex inventions, where the very ease with which the invention can be understood may prompt one “to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher.” Id.

Our case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references. See, e.g. C.R. Bard, Inc. v M3 Sys., Inc., 157 F3d 1340, 1352, 48 USPQ2d 1225, 1232 (Fed. Cir. 1998) (describing “teaching or suggestion or motivation [to combine]” as an “essential evidentiary component of an obviousness holding”); In re Rouffet, 149 F3d 1350, 1359, 47 USPQ2d 1453, 1459 (Fed. Cir. 1998) (“the Board must identify specifically...the reasons one of ordinary skill in the art would have been motivated to select the references and combine them”); In re Fritch, 972 F2d 1260, 1265, 23 USPQ2d 180, 1783 (Fed. Cir. 1992) (examiner can satisfy burden of obviousness in light of combination “only by showing some objective teaching [leading to the combination]”); In re Fine, 837 F2d 1071, 1075, 5 USPQ2d 1596, 1600 (Fed. Cir. 1988) (evidence of teaching or suggestion “essential” to avoid hindsight); Ashland Oil, Inc. v Delta Resins & Refractories, Inc., 776 F2d 281, 297, 227 USPQ 657, 667 (Fed. Cir. 1985) (district court’s conclusion of obviousness was error when it “did not elucidate any factual teachings, suggestions or incentives from this prior art that showed the propriety of combination”). See also Graham, 383 U.S. at 18, 148 USPQ 1t 467 (“strict observance” of factual predicates to obviousness conclusion required). Combining prior art references without evidence of such a suggestion, teaching or motivation simply takes the inventor’s disclosure as a blueprint for piecing together the prior art to defeat patentability - - the essence of hindsight. See, e.g. Interconnect Planning Corp. v Feil, 774 F2d 1132, 1138, 227 USPQ 543, 547 (Fed. Cir. 1985) (“The invention must be viewed not with the blueprint drawn by the inventor, but in the state of the art that existed at the time.”) In this case, the Board fell into the hindsight trap.

It is respectfully submitted that the unobviousness of amended claims 22, 26, 29 and 39 is further supported by the Declaration re. Commercial Success and Acclaim submitted herewith.

As stated by the Court of Appeals for the Federal Circuit in Pro-Mold and Tool Co. v Great Lakes Plastics, Inc., 75 F.3d 1538, 37 USPQ2d 1626 (Fed. Cir. 1996):

A determination of obviousness under 35 U.S.C. § 103 is a legal conclusion involving factual inquiries. Uniroyal, Inc. v Rudkin-Wiley Corp., 837 F. 2d 1044, 1050, 5 USPQ2d 1434m 1438 (Fed. Cir.) cert. denied, 448 U.S. 825 (1988) Among these factual inquiries are secondary considerations, which include evidence of factors tending to show nonobviousness, such as commercial success of the invention, satisfying a long-felt need, failure of others to find a solution to the problem at hand, and copying of the invention by others. Id.; Panduit Corp. v. Dennison Mft. Co., 810 F2d 1561, 1566, 1 USPQ2d 1593, 1595, (Fed. Cir.) cert. denied 481 U.S. 1052 (1987).

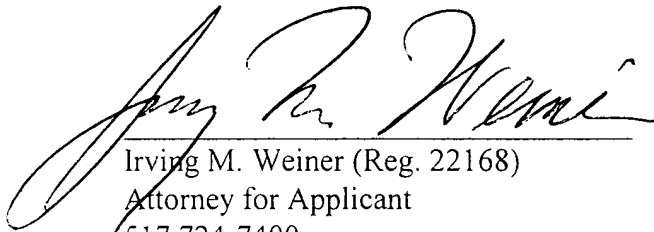
In light of the foregoing, applicant respectfully requests reconsideration of the 35USC103 rejection with a view toward withdrawing same.

In light of the foregoing, and the allowance of claims 33-38, it is respectfully submitted that the application is now in condition for allowance and a notice to this effect is earnestly solicited.

Applicant also encloses herewith a Petition for Extension of Time Under 37 CFR 1.136(a) with the required extension fee. Favorable reconsideration is respectfully requested.

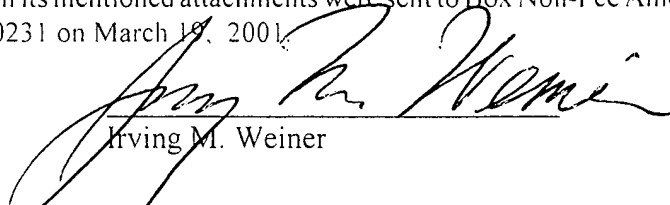
Respectfully submitted,

Date: March 19, 2001  
Weiner & Burt, P.C.  
635 N. US-23  
POB 186  
Harrisville, MI 48740

  
Irving M. Weiner (Reg. 22168)  
Attorney for Applicant  
517 724-7400

**Certificate of Mailing**

I hereby certify that the foregoing amendment with its mentioned attachments were sent to Box Non-Fee Amendment, Commissioner for Patents, Washington, D.C. 20231 on March 19, 2001.

  
Irving M. Weiner  
9



1     22.     In a multiple phase electrical system for supplying power from an AC source to one or  
2     more nonlinear loads connected to at least one phase line therein, a device for substantially  
3     eliminating currents in a neutral wire, said device comprising:

4             a first completely-passive parallel resonant circuit having three passive electrical branches  
5     connected in parallel;

6             said first completely-passive parallel resonant circuit is tuned to a third harmonic  
7     frequency of a fundamental frequency of said AC source; and

8             said three passive electrical branches comprise a first branch consisting of a capacitor, a  
9     second branch consisting of a reactor, and a third branch consisting of a resistor.

1     26.     A device according to claim 22, wherein:

2             each phase line of said multiple phase electrical system supplies power to an associated  
3     one of said nonlinear loads;

4             said device includes a second completely-passive parallel resonant circuit and a third  
5     completely-passive parallel resonant circuit;

6             each of said first, second and third completely-passive parallel resonant circuits is  
7     connected along a separate phase line of said multiple phase electrical system in series with at  
8     least one of said nonlinear loads whose power is supplied by said separate phase line; and

9             each of said first, second and third completely-passive parallel resonant circuits is tuned  
10     to said <sup>third</sup>predetermined harmonic frequency of said fundamental frequency of said AC source.

1        29.        A device for substantially eliminating a predetermined harmonic current generated by a  
2        nonlinear load in an electrical distribution system which distributes power from an AC source,  
3        said device comprising:

4                a completely-passive parallel resonant circuit connected in series with said nonlinear  
5        load;

6                said completely-passive parallel resonant circuit comprises three completely-passive  
7        electrical branches;

8                said completely-passive parallel resonant circuit is tuned to a third harmonic frequency  
9        of a fundamental frequency of said AC source to change the current drawn by said nonlinear  
10       load; and

11               said three completely-passive electrical branches comprise a first branch consisting of a  
12       capacitor, a second branch consisting of a reactor, and a third branch consisting of a resistor.

1     39.     A device for reducing currents in an electrical system which supplies power to a  
2     nonlinear load from an AC source, comprising:

3             a completely-passive parallel resonant circuit connected in series with said nonlinear  
4     load;

5             said completely-passive parallel resonant circuit comprises three completely-passive  
6     electrical branches;

7             said completely-passive parallel resonant circuit is tuned to a third harmonic frequency of  
8     said AC source to change the current drawn by said nonlinear load;

9             a housing member for said completely-passive parallel resonant circuit; and

10            means for connecting the nonlinear load to said completely-passive parallel resonant  
11     circuit.

Atty's Ref: HML201A1

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: LOWENSTEIN, M.

Serial No: 08/422,360

Filed: 04/17/95

Group Art Unit: 2836

Examiner: HUYNH, K.

Title: ELECTRICAL FILTER/PROTECTOR, AND METHODS....

**RECEIVED**

MAR 19 2001

WEINER &amp; BURT, P.C.

**DECLARATION RE COMMERCIAL SUCCESS AND ACCLAIM**

I, Michael Z. Lowenstein, hereby declare that:

1. I am the sole inventor of the subject matter which is disclosed and claimed in the above-identified patent application.
2. I am the President and Chief Technology Officer of Harmonics Limited, LLC, which is the assignee of the above-identified patent application.
3. I have carefully reviewed the above-identified patent application including all amendments filed therein as well as the Amendment-B filed concurrently herewith, and United States Patent Application Serial No. 08/130,088 (which is the parent application of the above-identified patent application) filed on September 30, 1993 including all amendments filed therein, all information

relating to sales, advertising, and commercialization of Harmonics Limited equipment which embodies the subject matter which is claimed in the aforementioned patent applications as initially filed, as well as claimed in all of the aforementioned amendments.

4. The term "INVENTION" as used herein means the invention as claimed in: claims 1-4, 6 and 18 of United States Patent Application Serial No. 08/130,088 and its Preliminary Amendment both filed on September 30, 1993; claims 23-25, 27, 29, 31, 34 and 35 of the Amendment-A filed on November 8, 1994 in United States Patent Application Serial No. 08/130,088; claims 2, 4, 6, 8, 10 and 11 of United States Patent Application Serial No. 08/422,360 as filed on April 17, 1995; claims 2, 4, 6, 11 and 21 of Amendment-B filed on September 2, 1995 in United States Patent Application Serial No. 08/422,360; claims 23, 25, 27, 28, 30 and 32 of the Preliminary Amendment-A filed October 16, 2000 and the subject Continued Prosecution Application (CPA) based on parent application 08/422,360; and claims 22, 26, 29 and 39 of Amendment-B filed concurrently herewith.
5. Equipment embodying the INVENTION was first introduced into the market and made available for sale in January, 1993.
6. Harmonic Limited products embodying the INVENTION have enjoyed significant commercial success since its introduction in January, 1993.
7. The total sales of Harmonics Limited products embodying the INVENTION have exceeded \$10,000,000.00 (Ten Million Dollars) through December 31, 2000.

8. The sales of Harmonics Limited products embodying the INVENTION constitute 95% of the total company sales.

9. "Total company sales" means all Harmonics Limited products sold to the public (with no sales made to representatives or distributors).

10. The sales trends of Harmonics Limited equipment embodying the INVENTION since its introduction in January, 1993 are as follows:

YEAR	1993	1994	1995	1996	1997	1998	1999	2000
SALES (thousands \$)	12	35	40	120	633	1,086	2,083	6,367

11. The commercial success or sales success of the Harmonics Limited products embodying the INVENTION is not due to price concessions. The products are sold at a higher initial cost than products incorporating competing technology.

12. The commercial success or sales success of the Harmonics Limited products embodying the INVENTION is not due to purchases by representatives and distributors. Harmonics Limited products embodying the INVENTION are sold directly to customers, not to distributors or representatives.

13. The commercial success or sales of Harmonics Limited products embodying the INVENTION is not due to a large advertising campaign. The first national advertising campaign for

the INVENTION was launched in June, 2000. Before that date, advertising was by word of mouth and direct customer contact by sales representatives. The national advertising expenditure in the year 2000 relating to Harmonics Limited products embodying the INVENTION was \$60,000.

14. Based on my many years of experience in the industry, the sales of Harmonics Limited products embodying the INVENTION far exceed that which would normally be expected in the relevant marketplace for a new product. For example, in 1996 a major company introduced a competing product that used different technology. The competing product cost over 24 million dollars to develop and was heavily advertised. In two years, sales consisted of less than 50 thousand dollars. The competing product was withdrawn from the marketplace.

15. The market share represented by the above-mentioned sales of Harmonics Limited products embodying the INVENTION is calculated as follows: Sales of all technologies purported to address the same segment of the market addressed by Harmonics Limited products embodying the INVENTION comprise about 10% of the potential market. Harmonics limited products embodying the INVENTION capture about 35% of this segment, or 3.5% of the total market.

16. The size of the market for Harmonics Limited products embodying the INVENTION is about \$300 million.

17. The sales of Harmonics Limited products embodying the INVENTION have come at the expense of other technologies, which have been in the marketplace for many years. These other technologies are offered at a lower price than the Harmonics Limited products embodying the

INVENTION, but the marketplace recognizes the superior technology of the INVENTION and is willing to pay the cost premium for this superior technology. While the market segment has grown marginally, sales of Harmonic Limited products embodying the INVENTION has displaced sales of other technologies.

18. The profitability of Harmonics Limited products embodying the INVENTION is out of the ordinary in the industry, averaging 79%. The usual profitability for products in the industry is under 35%.

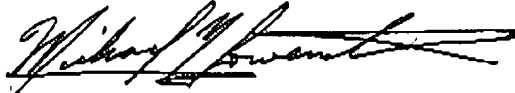
19. Harmonics Limited was recognized as one of the 50 fastest growing companies in Connecticut in the year 2000. This growth is entirely due to sales of products embodying the INVENTION.

20. Harmonics Limited's product the TransMax-Plus (i.e., the INVENTION packaged with a transformer) has been named a Top-20 finalist in the CEE (Contractor Electrical Equipment) News Product of the Year Competition for the year 2000. This Harmonics Limited product was featured at the recent Electric West Trade Show in Anaheim, California, and will be featured again in a special supplement in the April 2001 issue of the CEE News. In addition, Harmonics Limited has the license to use the official CEE News Product of the Year Finalist logo on all of its TransMax literature.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or



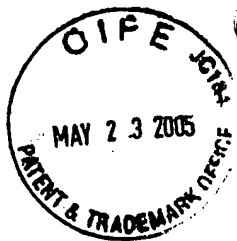
imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patents issued thereon.



Michael Z. Lowenstein

03/19/01

Date



Atty Dkt HML201A1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: LOWENSTEIN, M  
Serial No: 08/422,360  
Filed: 04/17/95  
Group Art Unit: 2836  
Examiner: HUYNH, K  
Title: ELECTRICAL FILTER/PROTECTOR, AND METHODS OF  
CONSTRUCTING AND UTILIZING SAME

AMENDMENT - C

Box Non-Fee Amendment  
Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

In response to the Office Action mailed April 30, 2001, please amend the above-identified patent application as follows:

IN THE CLAIMS:

Please cancel claim 36 without prejudice, and without abandonment or dedication of the subject matter thereof.

REMARKS

Upon entry of the present amendment, the claims remaining in the application are claims 22, 26, 29, 33-35, and 37-39. ✓

The allowance of claims 33-35, 37 and 38 is noted.

Claims 22, 26, 29 and 39 are presently rejected under 35 U.S.C. 103(a) as being unpatentable over "applicant's admitted prior art (page 1, lines 1 *et seq.*)" in view of Stacey and Thanawala. Applicant respectfully traverses this rejection based on the reasons set forth hereinbelow. ✓

The rejection fails to establish a prime facie case of unpatentability.

The label "applicant's admitted prior art" is misleading and/or inaccurate. Page 1 of the specification merely describes the "Field of Invention". Moreover, it is not clear which sentence or part of specification page 1 is being relied on. The designation page 1, lines 1 *et seq.* does not specify which part or sentence is being relied on.

Applicant respectfully traverses that page 1, lines 1 *et seq.* constitutes "applicant's admitted prior art".

Furthermore, it is clear that it is not contended that Stacey alone makes the rejected claims obvious. Therefore, the teachings of Stacey and Thanawala are combined in an attempt to allege obviousness of the rejected claims.

However, it is also clear that it is not contended that the combination of Stacey and Thanawala alone makes obvious the rejected claims. Thus, the rejection finds the need to combine the teachings of Stacey and Thanawala with the teaching of some unidentified portion of applicant's page 1, lines 1 *et seq.*

In contrast, applicant respectfully submits that if the prior art provides no teaching, suggestion or incentive supporting the combination proposed by the Examiner, then the rejection is in error and must be reversed. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (CAFC 1990).

Obvious to try, or obvious to test or experiment, is not a proper standard of patentability. "Selective hindsight is no more applicable to the design of experiments than it is to the combination of prior art teachings. There must be a reason or suggestion in the art for selecting the procedure used, other than the knowledge learned from applicant's disclosure." *In re Dow Chemical Co*, 837 F2d 469, 5 USPQ2d 1529, 1532 (CAFC 1988).

"To imbue one of ordinary skill in the art with knowledge of the invention... when no prior art reference or references of record convey or suggest that knowledge is to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher." *W.L. Gore & Associates Inc. v Garlock Inc.*, 721 F2d 1540, 1553, 220 USPQ 303, 312-13 (CAFC 1983).

Notwithstanding the foregoing, the Office Action states that "In this case, the examiner provided the motivations for combining the references as cited in the previous office action...." It is respectfully submitted that there is no proper authority for permitting the Examiner to provide the motivations for combining the references cited.

It is improper to use hindsight, after having read applicant's patent application, to determine patentability. In the present case, the rejected claims are alleged to be unpatentable based on a combination of prior art references, some unspecified portion of applicant's specification page 1, and the motivations for combining the foregoing coming from the Examiner after having read the present patent application.

It is also improper hindsight merely to "pick and chose" components from the prior art references to arrive at the claimed invention. There should be a suggestion in the prior art references to combine the components as recited in the claimed invention. Without this suggestion, the alleged obviousness rejection is improper.

The Office Action further alleges that claims 22, 26, 29 and 39, despite a slight difference in wording, essentially repeat the limitations as cited in appealed claims 1-11 and 20-21. The Examiner further contends "Note the specifics of the three passive electrical components which are tuned to the third harmonic frequency are recited in appealed claims 2 and 4." Applicant respectfully traverses these contentions.

Appealed claims 1-6 require "a first passive electrical component connected along a phase line in said electrical system in series with at least one of said nonlinear loads", whereas present claims 22, 29 and 39 do not.

Appealed claims 1-6, 20 and 21 require "to substantially eliminate a harmonic current drawn by said at least one nonlinear load connected in series with said parallel connections of said first, said second, and said third passive electrical components", whereas present claims 22, 26 and 39 do not.

Furthermore, present claims 22 and 26 require "a first completely-passive parallel resonant circuit," whereas appealed claims 1-6, 20 and 21 do not.

The foregoing distinctions apply with even greater force to present claim 26 which depends from present claim 22. In addition, present claim 26 requires "a second completely-passive parallel resonant circuit and a third completely-passive parallel resonant circuit," whereas the appealed claims do not.

Present claim 29 requires "a completely-passive parallel resonant circuit" which "comprises three completely-passive electrical branches," whereas the appealed claims do not.

Present claim 39 requires "a completely-passive parallel resonant circuit" which "comprises three completely-passive electrical branches" and "a housing member for said completely-passive parallel resonant circuit and means for connecting the nonlinear load to said completely-passive parallel resonant circuit", whereas the appealed claims do not.

Moreover, the above-quoted features of applicant's present claims are not found in the Stacey reference, or in the Thanawala reference, or in the unspecified portion of applicant's specification page 1, taken singly or in combination, with or without the Examiner's motivations for combining the cited references.

For a rejection to be proper under Section 103, the subject matter as a whole must have been obvious to a person having ordinary skill in the art to which the invention pertains. Thus, it is necessary to determine the level of ordinary skill in the relevant art. This, the Examiner has failed to do.

Factors pertinent to evaluating the level of ordinary skill include: the type of problems encountered in the art; the prior art solutions to those problems; the rapidity with which innovations are made in the art; the sophistication of the technology; and the educational level of workers active in the field. *Environmental Design Ltd. v Union Oil Co. of California*, 713 F.2d 693, 218 USPQ 865 (CAFC 1983).

This level of skill is not the skill possessed by a judge, or a layman, or by those skilled in remote fields of endeavor, or by Patent Examiners, or by geniuses in the field. The person of ordinary skill is a hypothetical, de jure person who is presumed by law to be aware of all the pertinent prior art. The actual inventor's skill is not determinative.

These and other considerations are all relevant to determining the level of ordinary skill in the relevant art. Once that level has been determined, there are still other factors ("secondary" considerations) that must be evaluated before it is at last possible to proceed to the final determination, i.e., the obviousness or nonobviousness of the invention.

The Supreme Court has held that such "secondary considerations as commercial success, long felt but unsolved needs, failures of others" and other similar matters, when present, must be employed to illuminate the circumstances surrounding the origin of the invention sought to be patented and may have relevancy as indicia as to the obviousness or nonobviousness of that invention.

In this connection, applicant has already filed on March 30, 2001 a Declaration Re Commercial Success And Acclaim by the inventor, Michael Z. Lowenstein.

Applicant submits herewith the corroborative Declarations by Rudolph J. Kraus and William J. Pirrone in support of the secondary considerations mentioned herein.

These "secondary" considerations are by no means secondary in importance. *Truswal Systems Corp. v Hydro-Air Engineering, Inc.*, 813 F.2d 1207, 2 USPQ2d 1034 (CAFC 1987). Rather, they are "secondary" in sequence. Objective evidence of these secondary considerations is often the most persuasive factors because it forestalls hindsight analysis. *Cable Electric Products, Inc. v Genmark, Inc.*, 770 F.2d 1015, 226 USPQ 881 (CAFC 1985).

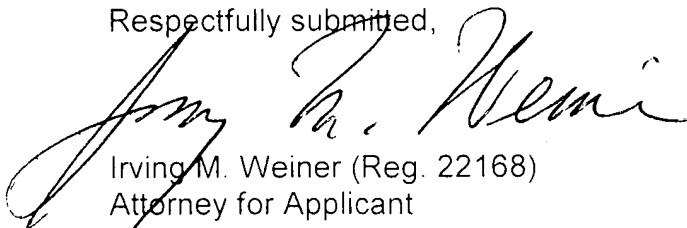
In light of the foregoing, applicant respectfully requests that the Examiner reconsider the obviousness rejection with a view toward withdrawing same.

It is respectfully submitted that the application is now in condition for allowance, and a notice to this effect is earnestly solicited.

The applicant also encloses herewith a Petition for Extension of Time under 37 CFR 1.136(a) with the required extension fee.

Favorable consideration respectfully requested.

Respectfully submitted,

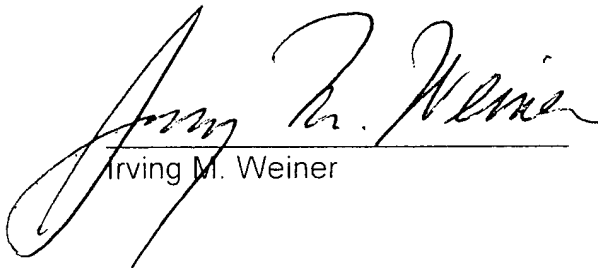


Irving M. Weiner (Reg. 22168)  
Attorney for Applicant  
989 724-7400

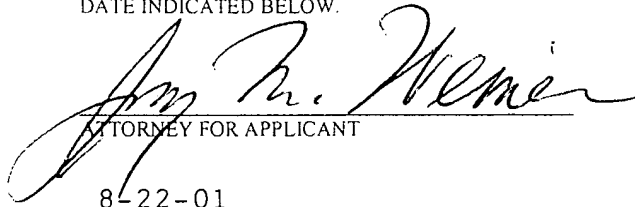
Date: August, 22, 2001  
Weiner & Burt, P.C.  
635 N. US-23  
POB 186  
Harrisville, MI 48740

Certificate of Mailing

I hereby certify that the foregoing amendment with its mentioned attachments were sent to Box Non-Fee Amendment, Commissioner for Patents, Washington, D.C. 202331 on August 22, 2001 by first class mail.

  
Irving M. Weiner

I HEREBY CERTIFY THAT THIS CORRESPONDENCE IS  
BEING DEPOSITED WITH THE UNITED STATES POSTAL  
SERVICE AS FIRST CLASS MAIL IN AN ENVELOPE  
ADDRESSED TO: ASSISTANT COMMISSIONER OF PATENTS  
AND TRADEMARKS, WASHINGTON, D.C. 20231, ON THE  
DATE INDICATED BELOW.

  
ATTORNEY FOR APPLICANT

8-22-01  
DATE OF SIGNATURE

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the Application	LOWENSTEIN, M.	)	
of:		)	Group Art Unit: MMC2/0430
		)	
on:	ELECTRICAL	)	Examiner: HUYNH, K.
	FILTER/PROTECTOR, AND	)	
	METHODS OF	)	
	CONSTRUCTING AND	)	
	UTILIZING SAME	)	
		)	
Serial No.:	08/422,360	)	
		)	
Filed On:	4/17/95	)	

Commissioner for Patents  
Washington, D.C. 20231

**DECLARATION OF RUDOLPH J. KRAUS**

I, Rudolph J. Kraus, hereby declare and state as follows:

1. I am employed by Data Support Associates (DSA) as CEO. DSA is a Representative Marketing Firm specializing in equipment to support continuous operation of critical computer facilities. The companies we represent supply premium products to ensure power quality for our customers. Over the past few years I have taken it upon myself to become familiar with every power quality enhancing technique available on the market. I have studied intensively all the technologies available to prevent electrical system problems caused by harmonic currents.

2. The term "INVENTION" as used herein means the devices defined by the following claims 22, 26, 29, and 39:

"22. In a multiple phase electrical system for supplying power from an AC source to one or more nonlinear loads connected to at least one phase line therein, a device for substantially eliminating currents in a neutral wire, said device comprising:

a first completely-passive parallel resonant circuit having three passive electrical branches connected in parallel;

said first completely-passive parallel resonant circuit is tuned to a third harmonic frequency of a fundamental frequency of said AC source; and

said three passive electrical branches comprise a first branch consisting of a capacitor, a second branch consisting of a reactor, and a third branch consisting of a resistor.

26. A device according to claim 22, wherein:

each phase line of said multiple phase electrical system supplies power to an associated one of said nonlinear loads;

said device includes a second completely-passive parallel resonant circuit and a third completely-passive parallel resonant circuit;

each of said first, second and third completely-passive parallel resonant circuits is connected along a separate phase line of said multiple phase electrical system in series with at least one of said nonlinear loads whose power is supplied by said separate phase line; and

each of said first, second and third completely-passive parallel resonant circuits is tuned to said predetermined harmonic frequency of said fundamental frequency of said AC source.



29. A device for substantially eliminating a predetermined harmonic current generated by a nonlinear load in an electrical distribution system which distributes power from an AC source, said device comprising:

a completely-passive parallel resonant circuit connected in series with said nonlinear load;

said completely-passive parallel resonant circuit comprises three completely-passive electrical branches;

said completely-passive parallel resonant circuit is tuned to a third harmonic frequency of a fundamental frequency of said AC source to change the current drawn by said nonlinear load; and

said three completely-passive electrical branches comprise a first branch consisting of a capacitor, a second branch consisting of a reactor, and a third branch consisting of a resistor.

39. A device for reducing currents in an electrical system which supplies power to a nonlinear load from an AC source, comprising:

a completely-passive parallel resonant circuit connected in series with said nonlinear load;

said completely-passive parallel resonant circuit comprises three completely-passive electrical branches;

said completely-passive parallel resonant circuit is tuned to a third harmonic frequency of said AC source to change the current drawn by said nonlinear load;

a housing member for said completely-passive parallel resonant circuit; and

means for connecting the nonlinear load to said completely-passive parallel resonant circuit.”

3. In particular I have examined closely the INVENTION utilized by Harmonics Limited, LLC (which is the assignee of the above-identified patent application), a device for substantially eliminating a predetermined harmonic current generated by a nonlinear load in an electrical distribution system which distributes power from an AC source.
4. I thoroughly understand how the INVENTION operates, which is unique to the industry because of the way it operates, actually preventing harmonic currents from flowing instead of removing them after they are in the system. Because of this, DSA has selected Harmonics Limited as one of the premier companies that we represent.
5. Harmonics Limited's technology utilizing the INVENTION blocks the formation of harmonic currents in the electrical distribution system. It uses a parallel-resonant tank circuit in series with the harmonic-current producing load. This tank circuit, tuned to the 3rd harmonic, has a near infinite impedance at that frequency and therefore will not permit 3rd harmonic currents to flow anywhere in the distribution system. Thus these damaging harmonic currents are never formed in the system and, therefore, do not have to be removed. All other technologies attempting to reduce harmonic current flow in a distribution system operate by absorbing, tolerating, or canceling the 3rd harmonic current after it is present and flowing in the system. These technologies do not remove harmonic current from the entire system, but only from the point where they are connected back to the transformer. These technologies dissipate the harmonic currents as heat, which must be removed from the facility at extra cost.

6. My firm first became associated with Harmonics Limited in 1996. At that time we contracted to represent products utilizing the INVENTION along the Eastern seaboard. It quickly became apparent that the Harmonics Limited products utilizing the INVENTION would be a major commercial success in the power quality market and we contracted to represent these products worldwide. Since 1996 our firm has sold more than 4.2 million dollars worth of units. Once design engineers understand the features of the Harmonics Limited products utilizing the INVENTION, they seldom consider using any of the competing technologies for solving harmonic problems. The essential difference between the INVENTION and other technologies is that the INVENTION incorporates a circuit that prevents formation of harmonic currents. It is the application of this circuit that makes the Harmonics Limited products so valuable and unique in the marketplace.
7. DSA's sales of harmonic suppression systems utilizing the INVENTION have been approximately as follows.

<u>Year Sold</u>	<u>Approximate Retail Dollar Value</u>
1996	98,971
1997	219,970
1998	562,243
1999	1,043,061
2000	2,318,946
Total to date	4,243,191

8. DSA's sales of Harmonic Limited Harmonic Suppression Systems utilizing the INVENTION are increasing and I expect this trend will continue. The action of the INVENTION to prevent formation of harmonic currents, rather than treating them


after they are formed, is the main reason we are having such success selling Harmonics Limited products.

9. DSA's sales of Harmonic Limited products utilizing the INVENTION are not the result of extensive advertising. In fact, the INVENTION is not the type of product that can be sold by advertising hyperbole, and Harmonics Limited has conducted minimal advertising in connection with this technology. Rather, the purchasers of this technology are sophisticated electrical and maintenance engineers who base purchasing decisions on functionality and performance. Harmonics Limited's products utilizing the INVENTION are sold by us by dealing directly on a one-to-one basis with the engineers responsible for computer center design and operation. DSA provides potential customers with literature, live demonstrations, and testimonial data. A demonstration of harmonic suppression by the INVENTION, particularly when compared with competing technologies, leaves no doubt that this unique technology is superior in every way.
10. Harmonic Limited's products utilizing the INVENTION are more expensive than competing technologies; therefore the commercial success, and our customers' reason for purchasing this technology, is not due to aggressive pricing or discounts. Once we explain to engineers how the INVENTION works, they clearly realize that the extra cost of equipment from Harmonics Limited utilizing the INVENTION is offset by superior operation and benefits.
11. The commercial success of equipment from Harmonics Limited utilizing the INVENTION is attributable to the unique way it operates, the prevention of harmonic

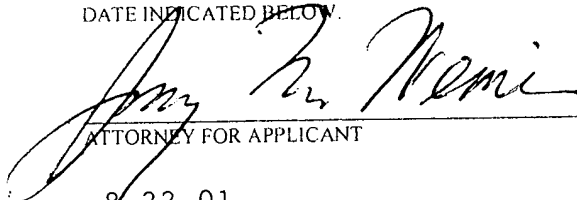
current flow rather than removal of harmonic currents after they are formed in the system.

12. I declare that all statements made herein of my own knowledge are true and all statements made on information and belief are believed to be true; and, further, that these statements were made with the knowledge that willful false statements and the like are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the above-identified application and any patent issuing thereon.

Dated: 10 Aug-01

  
\_\_\_\_\_  
Rudolph J. Kraus

I HEREBY CERTIFY THAT THIS CORRESPONDENCE IS  
BEING DEPOSITED WITH THE UNITED STATES POSTAL  
SERVICE AS FIRST CLASS MAIL IN AN ENVELOPE  
ADDRESSED TO: ASSISTANT COMMISSIONER OF PATENTS  
AND TRADEMARKS, WASHINGTON, D.C. 20231, ON THE  
DATE INDICATED BELOW.

  
ATTORNEY FOR APPLICANT

8-22-01  
DATE OF SIGNATURE

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the Application	LOWENSTEIN, M.	)	
of:		)	Group Art Unit: MMC2/0430
		)	
on:	ELECTRICAL	)	Examiner: HUYNH, K.
	FILTER/PROTECTOR, AND	)	
	METHODS OF	)	
	CONSTRUCTING AND	)	
	UTILIZING SAME	)	
		)	
Serial No.:	08/422,360	)	
		)	
Filed On:	4/17/95	)	

Commissioner for Patents  
Washington, D.C. 20231

DECLARATION OF WILLIAM J. PIRRONE

I, William J. Pirrone, hereby declare and state as follows:

1. I am employed by Chase Manhattan Bank as Vice President, Director of Global Engineering. I have been practicing electrical engineering for over twenty years. One of my duties is to obtain the best technology available to ensure absolute reliability of the power systems supporting our critical computer operations. Our computer operations must function on a 24 hour per day, 7 days per week basis; downtime is not permitted. As a result of my responsibilities, I have taken it upon myself to become familiar with every power quality

enhancing technique available on the market. I have studied intensively all the technologies available to prevent electrical system problems caused by harmonic currents.

2. The term "INVENTION" as used herein means the devices defined by the following claims 22, 26, 29, and 39:

"22. In a multiple phase electrical system for supplying power from an AC source to one or more nonlinear loads connected to at least one phase line therein, a device for substantially eliminating currents in a neutral wire, said device comprising:

a first completely-passive parallel resonant circuit having three passive electrical branches connected in parallel;

said first completely-passive parallel resonant circuit is tuned to a third harmonic frequency of a fundamental frequency of said AC source; and

said three passive electrical branches comprise a first branch consisting of a capacitor, a second branch consisting of a reactor, and a third branch consisting of a resistor.

26. A device according to claim 22, wherein:

each phase line of said multiple phase electrical system supplies power to an associated one of said nonlinear loads;

said device includes a second completely-passive parallel resonant circuit and a third completely-passive parallel resonant circuit;

each of said first, second and third completely-passive parallel resonant circuits is connected along a separate phase line of said multiple phase electrical system in series with at least one of said nonlinear loads whose power is supplied by said separate phase line; and

each of said first, second and third completely-passive parallel resonant circuits is tuned to said predetermined harmonic frequency of said fundamental frequency of said AC source.

29. A device for substantially eliminating a predetermined harmonic current generated by a nonlinear load in an electrical distribution system which distributes power from an AC source, said device comprising:

a completely-passive parallel resonant circuit connected in series with said nonlinear load;

said completely-passive parallel resonant circuit comprises three completely-passive electrical branches;

said completely-passive parallel resonant circuit is tuned to a third harmonic frequency of a fundamental frequency of said AC source to change the current drawn by said nonlinear load; and

said three completely-passive electrical branches comprise a first branch consisting of a capacitor, a second branch consisting of a reactor, and a third branch consisting of a resistor.

39. A device for reducing currents in an electrical system which supplies power to a nonlinear load from an AC source, comprising:

a completely-passive parallel resonant circuit connected in series with said nonlinear load;

said completely-passive parallel resonant circuit comprises three completely-passive electrical branches;

said completely-passive parallel resonant circuit is tuned to a third harmonic frequency of said AC source to change the current drawn by said nonlinear load;

a housing member for said completely-passive parallel resonant circuit; and

means for connecting the nonlinear load to said completely-passive parallel resonant circuit."



3. In particular I have examined closely the INVENTION utilized by Harmonics Limited, LLC (which is the assignee of the above-identified patent application), a device for substantially eliminating a predetermined harmonic current generated by a nonlinear load in an electrical distribution system which distributes power from an AC source.
4. I thoroughly understand how the INVENTION operates, which is unique to the industry because of the way it operates, actually preventing harmonic currents from flowing instead of removing them after they are in the system. Because of this, I have chosen Harmonics Limited equipment utilizing the INVENTION for all our critical power sites.
5. Harmonics Limited's technology utilizing the INVENTION blocks the formation of harmonic currents in the electrical distribution system. It uses a parallel-resonant tank circuit in series with the harmonic-current producing load. This tank circuit, tuned to the 3rd harmonic, has a near infinite impedance at that frequency and therefore will not permit 3rd harmonic currents to flow anywhere in the distribution system. Thus these damaging harmonic currents are never formed in the system and, therefore, do not have to be removed. All other technologies attempting to reduce harmonic current flow in a distribution system operate by absorbing, tolerating, or canceling the 3rd harmonic current after it is present and flowing in the system. These technologies do not remove harmonic current from the entire system, but only from the point where they are connected back to the transformer. These technologies dissipate the harmonic currents as heat, which must be removed from the facility at extra cost.

6. I first purchased harmonic suppression systems using the INVENTION from Harmonics Limited in the year 2000. Since that time I have purchased more than one million dollars worth of units using the INVENTION on the way to my goal of equipping every Chase facility which has critical computer loads with Harmonics Limited products using the INVENTION. I would never consider using any of the competing technologies for solving harmonic problems. The essential difference between the INVENTION and other technologies is that the INVENTION incorporates a circuit that prevents formation of harmonic currents. It is the application of this circuit that makes the Harmonics Limited products so valuable and unique in the marketplace.
7. Chase Bank's purchases of harmonic suppression systems containing the INVENTION have been approximately as follows.

<u>Year Purchased</u>	<u>Approximate Retail Dollar Value</u>
2000	572,000.00
2001 (through 6/31)	513,200.00
Total to date	1,085,200.00

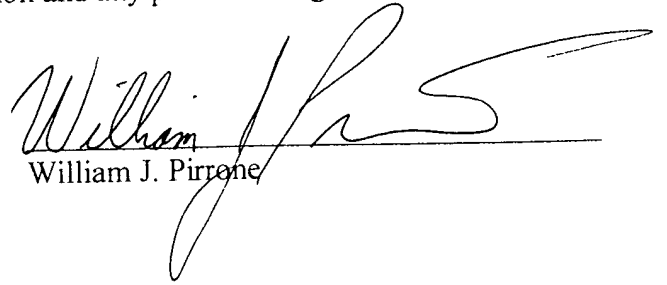
8. Chase Bank's purchases of Harmonic Limited harmonic suppression systems utilizing the INVENTION are increasing, and I expect this trend will continue. Our goal is to have every one of our critical computer centers protected by the INVENTION. The action of the INVENTION to prevent formation of harmonic currents, rather than treating them after they are formed, is the reason we are using and will continue to order Harmonics Limited products containing the INVENTION.

9. Chase Bank's purchases of Harmonic Limited products utilizing the INVENTION are not the result of extensive advertising. In fact, the INVENTION is not the type of product that can be sold by advertising hyperbole, and Harmonics Limited has conducted minimal advertising in connection with this technology. Rather, the purchasers of this technology are sophisticated electrical and maintenance engineers who base purchasing decisions on functionality and performance. Harmonics Limited's products utilizing the INVENTION are sold entirely through a network of representative sales firms which deal directly on a one-to-one basis with the engineers responsible for computer center design and operation. The rep firms provide potential customers with literature, live demonstrations, and testimonial data. A demonstration of harmonic suppression by the INVENTION, particularly when compared with competing technologies, leaves no doubt that this unique technology is superior in every way.
10. Harmonic Limited's products utilizing the INVENTION are more expensive than competing technologies; therefore the commercial success, and Chase's reason for purchasing this technology, is not due to aggressive pricing or discounts.
11. The commercial success of equipment from Harmonics Limited utilizing the INVENTION is attributable to the unique way it operates, the prevention of harmonic current flow rather than removal of harmonic currents after they are formed in the system.
12. I declare that all statements made herein of my own knowledge are true and all statements made on information and belief are believed to be true; and, further, that these statements were made with the knowledge that willful false statements and the

like are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the above-identified application and any patent issuing thereon.

Dated: \_\_\_\_\_

Aug. 7, 2001

  
\_\_\_\_\_  
William J. Pirrone